

In the Claims

Please replace all listings of the claims with the following:

Claim 1 (Original) A method for:

- (a) differentiating animals and animal products on the basis of breed origin; or
 - (b) determining or testing the breed origin of an animal product; or
 - (c) validating an animal product;
- comprising the steps of:
- (i) providing a sample of the animal product; and
 - (ii) analysing the allele(s) of one or more breed determinant genes present in the sample.

Claim 2 (Original) The method of claim 1 wherein the breed determinant is a monogenic trait.

Claim 3 (Original) The method of claim 1 wherein the breed determinant is a polygenic trait.

Claims 4-5 (Cancelled)

Claim 6 (Original) The method of any one of the preceding claims wherein the breed determinant gene analysed in step (ii) is selected from any of:

- (a) a coat colour gene; and/or
- (b) a coat pattern gene; and/or
- (c) a coat texture gene; and/or
- (d) a coat density gene; and/or
- (e) a coat length gene; and/or
- (f) an ear aspect gene; and/or
- (g) a double muscling gene; and/or
- (h) a horn morphology gene; and/or
- (i) a tusk morphology gene; and/or
- (j) an eye colour gene; and/or

- (k) a plumage gene; and/or
- (l) a beak colour/morphology gene; and/or
- (m) a vocalization (e.g. barking) gene; and/or
- (n) a comb or wattle gene; and/or
- (o) a gene controlling display behaviour.

Claim 7 (Original) The method of claim 6(a) wherein the coat colour gene is the *KIT* or *α MSHR* gene (for example, the pig *KIT* *α MSHR* or gene).

Claim 8 (Original) The method of any one of the preceding claims wherein the sample is a nucleic acid sample and the analysing step (ii) comprises DNA or RNA analysis.

Claim 9 (Original) The method of any one of claims 1-7 wherein the sample is a protein sample and the analysing step (ii) comprises protein analysis.

Claim 10 (Original) A method of determining the coat colour genotype of a pig which comprises:

- (i) obtaining a sample of pig nucleic acid; and
- (ii) analysing the nucleic acid obtained in (i) to determine which allele or alleles of the *α MSHR* gene is/are present.

Claims 11-33 (Cancelled)

Claim 34 (Original) The method of any one of claims 7, 10, 11, 14-23 and 28-33 wherein the analysis step (ii) comprises restriction fragment length polymorphism (RFLP) analysis, for example involving digesting the pig nucleic acid with one or more of the restriction enzymes *Bst*UI, *Hha*I and/or *Bsp*HI.

Claim 35 (Original) The method of claim 34 wherein the gene is the pig *α MSHR* gene and the analysis involves identification of a polymorphism at nucleotide position 283, 305, 363, 370,

491, 727, 729 1162 or between nucleotide positions 60 and 70 or between nucleotide positions 1005 and 1010 of the sequence of the pig *aMSHR* gene.

Claims 36-41 (Cancelled)

Claim 42 (Currently Amended) A kit for:

- (a) differentiating animal products on the basis of breed origin; or
- (b) determining or testing the breed origin of an animal product; or
- (c) validating an animal product;

~~comprising~~ consisting essentially of one or more reagents for ~~analysing~~ distinguishing the allele(s) of one or more breed determinant genes present in the sample.

Claims 43-47 (Cancelled)